

## A B S T R A C T

A METHOD OF FABRICATING A ZIRCONIUM ALLOY FLAT PRODUCT, A  
PRODUCT AS OBTAINED THEREBY, AND A FUEL ASSEMBLY ELEMENT  
5 FOR A POWER STATION NUCLEAR REACTOR MADE FROM SAID FLAT  
PRODUCT

A method of fabricating a zirconium alloy flat  
product, the method being characterized by: preparing or  
10 casting a zirconium alloy ingot containing at least 95%  
by weight of zirconium, and including the usual  
impurities and alloying elements; shaping said ingot in  
order to obtain a flat product; subjecting said flat  
product to a  $\beta$  quenching operation under conditions that  
15 are determined to obtain within the flat product an  
acicular structure at the end of said  $\beta$  quenching;  
subjecting said flat product, after the  $\beta$  quenching, to a  
rolling operation performed in a single rolling sequence  
without intermediate annealing, said rolling being  
20 performed at a temperature lying in the range ambient to  
200°C, and having a reduction ratio lying in the range 2%  
to 20%; and subjecting said rolled flat product to an  
annealing treatment in the  $\alpha$  range or in the  $\alpha + \beta$  range,  
performed in the temperature range 500°C to 800°C for  
25 2 minutes to 10 hours. A zirconium alloy flat product as  
obtained by the method, and a fuel assembly element for a  
power station nuclear reactor obtained by shaping the  
product.

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35 Translation of the title and the abstract as published by the PCT Authorities,  
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48.3.